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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT***(Use as many sheets as necessary)*

Sheet 1 of 5

Complete if Known

Application Number	10/586,501
Filing Date	September 14, 2007
First Named Inventor	Martin HENDRIX, et al.
Art Unit	1624
Examiner Name	Rao Deepak R.
Attorney Docket Number	01-2118

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
		2007/0161662 A1	07-12-2007	Martin HENDRIX, et al.	
		2006-0111372 A1	05-25-2006	Martin HENDRIX, et al.	
		2006/0106035 A1	05-18-2006	Martin HENDRIX, et al.	
		2006-0100222 A1	05-11-2006	Frank-Gerhard BOSS, et al.	
		2004/0266736 A1	12-30-2004	Frank WUNDER, et al.	
		2007/0105876 A1	05-10-2007	Martin HENDRIX, et al.	
		5,256,668	10-26-1993	Kuo-HOM, et al.	
		5,977,118	11-2-1999	Edward R. BACON, et al.	
		5,002,949	3-26-1991	Steven M. PESECKIS, et al.	
		3,732,225	05-08-1973	Hermann BREUER, et al.	
		3,165,520	01-12-1965	Paul SCHMIDT, et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ - Number ⁴ - Kind Code ⁵ (if known)				
		CA 2 484 997 A1	04-22-2003	Bayer Cropscience AG		
		CA 2 417 631 A1	01-29-2003	Bayer Aktiengesellschaft		
		CA 2 438 890 A1	09-06-2002	Bayer Aktiengesellschaft		
		CA 2 496 194 A1	03-04-2004	Bayer Healthcare AG		
		CA 2 496 292 A1	04-01-2004	Bayer Healthcare AG		
		CA 2 496 308 A1	04-01-2004	Bayer Healthcare AG		
		CA 2 283 211 A1	09-17-1998	Bayer Aktiengesellschaft		
		CH 396 923	01-31-1966	CIBA Aktiengesellschaft		
		CH 396 924	01-31-1966	CIBA Aktiengesellschaft		
		CH 396 925	01-31-1966	CIBA Aktiengesellschaft		
		CH 396 926	01-31-1966	CIBA Aktiengesellschaft		
		CH 396 927	01-31-1966	CIBA Aktiengesellschaft		
		DE 1 153 023	08-22-1963	CIBA Aktiengesellschaft		
		DE 1 149 013	05-22-1963	CIBA Aktiengesellschaft		
		DE 2 408 906	09-19-1974	Chemische Fabrik von Heyden GmbH		
		DE 1 156 415	10-31-1963	CIBA Aktiengesellschaft		
		DE 101 56 249	05-28-2003	Bayer, AG		
		DE 1 147 234	04-18-1963	CIBA Aktiengesellschaft		
		EP 0 995 751 A2	04-26-2000	Pfizer Inc.		
Examiner Signature				Date Considered		

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		GB 937,726	09-25-1963	CIBA Limited		
		GB 973,361	10-28-1964	CIBA Limited		
		WO 02/055082 A1	07-18-2002	Vernalis Research Limited		
		WO 02/06288 A1	01-24-2002	F. Hoffmann-La Roche AG		
		WO 2004/018474 A1	03-04-2004	Bayer Healthcare AG		
		WO 2004/026286 A3	04-01-2004	Bayer Healthcare AG		
		WO 02/068423 A1	09-06-2002	Bayer Aktiengesellschaft		
		WO 02/09713 A2	02-07-2002	Bayer Aktiengesellschaft		
		WO 03/093269 A2	11-13-2003	Bayer Cropscience AG		
		WO 03/037899 A1	05-08-2003	Pfizer Limited		
		WO 03/041725 A2	05-22-2003	Bayer Aktiengesellschaft		
		WO 99/41253	08-19-1999	Tularik Inc.		
		WO 98/40384	09-17-1998	Bayer Aktiengesellschaft		
		WO 98/10765	03-19-1998	The Board of Trustees		
		WO 2004/026286 A2	04-01-2004	Bayer Healthcare AG		
		WO 2004/026876 A1	04-01-2004	Bayer Healthcare AG		
		WO 2004/026286 A1	04-01-2004	Bayer Healthcare AG		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		F. Josef van der STAAY, et al., "The novel selective PDE9 inhibitor BAY 73-6691 improves learning and memory in rodents", NEUROPHARMACOLOGY, 55 (2008) pp. 908-916	
		U. EBERT, et al., "Scopolamine model of dementia: electroencephalogram findings and cognitive performance", EUROPEAN JOURNAL OF CLINICAL INVESTIGATION, (1998) 28, pp. 944-949	
		Jos PRICKAERTS, et al., "Possible role of nitric oxide-cyclic GMP pathway in object recognition memory: Effect of 7-nitroindazole and zaprinast", EUROPEAN JOURNAL OF PHARMACOLOGY 337 (1997) pp. 125-136	
		F. Zaragoza DÖRWALD, "Side Reactions in Organic Synthesis", A GUIDE TO SUCCESSFUL SYSTHESIS DESIGN, 2005, 4 pages	
		Kenneth F. PODRAZA, "Reductive Cyclization of Ketoesters Utilizing Sodium Cyanoborohydride: Synthesis of γ - and δ -Lactones" J. HETEROCYCLIC CHEM., 24, 193 (1987)	
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		Internet Article, "Amnesia", From Wikipedia, the free encyclopedia, 3 pages	
		Reid IA, "Role of phosphodiesterase isoenzymes in the control of rennin secretion: effects of selective enzyme inhibitors", CURR PHARM DES, 1999, Sep; 5(9); 725-35	
		Edwin J. WEEBER, et al., "Molecular Genetics of Human Cognition", MOLECULAR INVENTIONS, Vol. 2, Issue 6, October 2002, pps. 376-391	
		International Search Report for International Application No. PCT/EP2004/004455 mailed September 17, 2004, 8 pages	
		International Search Report for International Application No. PCT/EP2004/004412 mailed July 14, 2004, 6 pages	
		International Search Report for International Application No. PCT/EP03/08979 mailed November 25, 2003, 8 pages	
		International Search Report for International Application No. PCT/EP03/08923 mailed December 15, 2003, 6 pages	
		International Search Report for International Application No. PCT/EP2004/006477 mailed October 27, 2004, 8 pages	
		International Search Report for International Application No. PCT/EP2004/014872 mailed May 19, 2005, 10 pages	
		Scott H. SODERLING, et al., "Identification and Characterization of a Novel Family of Cyclic Nucleotide Phosphodiesterases", THE JOURNAL OF BIOLOGICAL CHEMISTRY, Vol. 273, No. 25, Issue of June 19, 1998, pgs. 15553-15558	
		Scott H. SODERLING, et al., "Regulation of cAMP and cGMP signaling: new phosphodiesterases and new functions", CURRENT OPINION IN CELL BIOLOGY, 2000, 12:174-179	
		Svetlana G. ANDREEVA, et al., "Expression of cGMP-Specific Phosphodiesterase 9A mRNA in the Rat Brain", THE JOURNAL OF NEUROSCIENCE, November 15, 2001, 21(22); pgs. 9068-9076	
		C. C. CHENG, et al., "Potential Purine Antagonist VII. Synthesis of 6-Alkylpyrazolo-[3,4-d]pyrimidines ^{12a} ", POTENTIAL PURINE ANTAGONISTS, VII, Vol. 23, February 1958, pgs. 191-200	
		Lindsay FAWCETT, et al., "Molecular cloning and characterization of a distance human phosphodiesterase gene family: PDE11A", PNAS, Vol. 97, No. 7, March 28, 2000, pgs. 3702-3707	
		Douglas A. FISHER, et al., "Isolation and Characterization of PDE9A, a Novel Human cGMP-specific Phosphodiesterase", THE JOURNAL OF BIOLOGICAL CHEMISTRY, Vol. 273, No. 25, Issue of June 19, 1998, pgs. 15559-15564	
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NON PATENT LITERATURE DOCUMENTS

Douglas A. FISHER, et al., "Isolation and Characterization of PDE8A, a Novel Human cAMP-Specific Phosphodiesterase", BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, Vol. 246, April 15, 1998, pgs. 570-577

Sharron H. FRANCAIS, et al., "Characterization of a Novel cGMP Binding Protein from Rat Lung", THE JOURNAL OF BIOLOGICAL CHEMISTRY, Vol. 255, No. 2, Issue of January 25, 1980, pgs. 620-626

Kotomi FUJISHIGE, et al., "Cloning and Characterization of a Novel Human Phosphodiesterase That Hydrolyzes Both cAMP and cGMP (PDE10A)", THE JOURNAL OF BIOLOGICAL CHEMISTRY, Vol. 274, No. 26, Issue of June 25, 1999, pgs. 18438-18445

Heike GIELEN, et al., "A novel approach to amidines from esters", TETRAHEDRON LETTERS, 43, 2002, pgs. 419-421

Rudolf GOMPPER, et al., "Substituted dithiocarboxylic acids and ketene thioacetals", CARBOXYLIC ACID DERIVATIVES, Vol. 95, 1962, pgs. 2861-2870

Peter G. GILLESPIE, et al., "Characterization of a Bovine Cone Photoreceptor Phosphodiesterase Purified by Cyclic GMP-Sepharose Chromatography", THE JOURNAL OF BIOLOGICAL CHEMISTRY, "Vol. 263, No. 17, Issue of June 15, 1988, pgs. 8133-8141

Michel GUIPPONI, et al., "Identification and characterization of a novel cyclic nucleotide phosphodiesterase gene (PDE9A) that maps to 21q22.3: alternative splicing of mRNA transcripts, genomic structure and sequence", HUM GENET (1998) 103:386-392

J.M. HETMAN, et al., "Cloning and characterization of PDE7B, a cAMP-specific phosphodiesterase", PNAS, Vol. 97, No. 1, January 4, 2000, pgs. 472-476

Kate LOUGHNEY, et al., "Isolation and Characterization of cDNAs Corresponding to Two Human Calcium, Calmodulin-regulated, 3',5'-Cyclic Nucleotide Phosphodiesterases", THE JOURNAL OF BIOLOGICAL CHEMISTRY, Vol. 271, No. 2, Issue of January 12, 1996, pgs. 796-806

James E. HUETTNER, et al., "Primary Culture of Identified Neurons from the Visual Cortex of Postnatal Rats", THE JOURNAL OF NEUROSCIENCE, Vol. 6, No. 10, pgs. 3044-3060

Kate LOUGHNEY, et al., "Isolation and characterization of cDNAs encoding PDE5A, a human cGMP-binding, cGMP-specific 3',5'-cyclic nucleotide phosphodiesterase", GENE, 216 (1998), pgs. 139-147

Clair LUGNIER, "Cyclic nucleotide phosphodiesterase (PDE) superfamily: A new target for the development of specific therapeutic agents", PHARMACOLOGY & THERAPEUTICS, 109 (2006), pgs. 366-398

Timothy J. MARTINS, et al., "Purification and Characterization of a Cyclic GMP-stimulated Cyclic Nucleotide Phosphodiesterase from Bovine Tissues", THE JOURNAL OF BIOLOGICAL CHEMISTRY, Vol. 257, No. 4, Issue of February 25, 1981, pgs. 1973-1979

Akira MIYASHITA, et al. "Studies on Pyrazolo[3,4-d]Pyrimidine Derivatives", HETEROCYCLE, Vol. 31, No. 7, 1990, pgs. 1309-1314

Takashi MIKI, et al., "Characterization of the cDNA and Gene Encoding Human PDE3B, the cGIP1 Isoform of the Human Cyclic GMP-Inhibited Cyclic Nucleotide Phosphodiesterase Family", GENOMICS, 36, 1996, pgs. 476-485

Seiko MURASHIMA, et al., "Characterization of Particulate Cyclic Nucleotide Phosphodiesterases from Bovine Brain: Purification of a Distinct cGMP-Stimulated Isoenzyme", BIOCHEMISTRY, Vol. 29, 1990, pgs. 5285-5292

Rena OBERNOTLE, et al., "The cDNA of a human lymphocyte cyclic-AMP phosphodiesterase (PDE IV) reveals a multigene family", GENE, Vol. 29, 1993, pgs. 239-247

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NON PATENT LITERATURE DOCUMENTS

K. Hemender REDDY, et al., "Versatile synthesis of 6-alkyl/aryl-1H-pyrazolo[3,4-d]pyrimidin-4[5H]-ones", INDIAN JOURNAL OF CHEMISTRY, Vol. 31B, March 1992, pgs. 163-166

Magnus ROENN, et al., "Palladium (II)-Catalyzed Cyclization Using Molecular Oxygen as Reoxidant", TETRAHEDRON LETTERS, Vol. 36, No. 42, 1995, pgs. 7749-7752

Guy J. ROSMAN, et al., "Isolation and Characterization of human cDNAs encoding a cGMP-stimulated 3',5'-cyclic nucleotide phosphodiesterase", GENE, Vol. 191, 1997, pgs. 89-95

P. SCHMIDT, et al., "A new synthesis of pyrazolo [3,4-d] pyrimidines having coronary dilation properties", HELVETICA CHIMICA ACTA, Volume XLV, fascicule V (1962) No. 189, pgs. 1620-1627

Arne SCHOUSBOE, et al., "Role of CA⁺⁺ and Other Second Messengers in Excitatory Amino Acid Receptor Mediated Neurodegeneration: Clinical Perspectives", CLINICAL NEUROSCIENCE, Vol. 4, 1997, pgs. 194-198

Joachim ULIRCH, "Crystallization", KIRK-OTHMER ENCYCLOPEDIA OF CHEMICAL TECHNOLOGY, August 16, 2002, 7 pages

Anthony R. WEST, "Solid Solutions", Department of Chemistry University of Aberdeen, March 3, 1988, 3 pages

Sudha R. VIPPAGUNTA, et al., "Crystalline Solids", ADVANCED DRUG DELIVERY REVIEWS, Vol. 48, 2001, pgs. 3-26

Ji-Ye WEI, et al., "Molecular and Pharmacological Analysis of Cyclic Nucleotide-Gated Channel Function in the Central Nervous System", PROGRESS IN NEUROBIOLOGY, Vol. 56, 1998, pgs. 37-64

Internet Article, "Dementia", Information from the Mental Health Foundation, March 19, 2008, 3 pages

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